

## CLAIMS

1. An order-receiving production method of a wire comprising the steps of:

collecting a necessary amount of pellets of synthetic resin for constituting a coating of the wire, a core wire, and an additive to be added into the synthetic resin after receiving an order of the wire; and

extruding a mixture of the pellets and the additive onto the circumference of the core wire while simultaneously mixing the pellets and the additive so that the core wire is coated with the mixture, thereby producing the wire having a necessary length.

2. The order-receiving production method of a wire according to claim 1, wherein an outer surface of the wire produced is monochromatic.

3. The order-receiving production method of a wire according to claim 2, wherein the outer surface of the wire produced is colored with a desired color.

4. The order-receiving production method of a wire according to claim 1, 2 or 3, wherein the wire produced is further crosslinked.

5. An order-receiving production method of a wiring harness comprising the steps of:

collecting a necessary amount of pellets of synthetic resin for constituting a coating of the wire of the wiring harness, a core wire, and an additive to be added into the synthetic resin after receiving an order of the wiring harness;

extruding a mixture of the pellets and the additive onto the circumference of the core wire while simultaneously mixing the pellets

and the additive so that the core wire is coated with the mixture, thereby producing the wire having a necessary length; and

attaching specific components to the wire produced, thereby assembling the wiring harness.

6. The order-receiving production method of a wiring harness according to claim 5, wherein an outer surface of the wire produced is monochromatic.

7. The order-receiving production method of a wiring harness according to claim 6, wherein the outer surface of the wire produced is colored with a desired color.

8. The order-receiving production method of a wiring harness according to claim 5, 6 or 7, wherein the wire produced is further crosslinked.

9. An order-receiving production system of a wire comprising:

- a wire-producing department for producing the wire;

- a production control department for controlling the wire-producing department and receiving an order of the wire;

- a first producing department for producing a pellet;

- a second producing department for producing a core wire; and

- a third producing department for producing an additive,

wherein the production control department: computes a first ordered quantity data indicating an amount of the pellet of synthetic resin for constituting a coating of the wire corresponding to the amount of the received order forwarded from an order-placing department and forwards the first ordered quantity data to the first producing department; computes a second ordered quantity data indicating an amount of the

core wire corresponding to the amount of the received order forwarded from the order-placing department and forwards the second ordered quantity data to the second producing department; and computes a third ordered quantity data indicating an amount of the additive to be added to the synthetic resin corresponding to the amount of the received order forwarded from the order-placing department and forwards the third ordered quantity data to the third producing department,

the first, second and third producing departments produce the pellet, core wire and additive to the amount corresponding to the first, second and third ordered quantity data, respectively, and send the produced pellet, core wire and additive, respectively, to the wire-producing department, and

the wire-producing department extrudes a mixture of the pellets sent from the first producing department and the additive sent from the third producing department onto the circumference of the core wire sent from the second producing department while simultaneously mixing the pellets and the additive so that the core wire is coated with the mixture, thereby producing the wire having a necessary length.

10. The order-receiving production system of a wire according to claim 9, wherein an outer surface of the wire produced is monochromatic.

11. The order-receiving production system of a wire according to claim 10, further comprising a coloring device for coloring the outer surface of the wire produced with a desired color.

12. The order-receiving production system of a wire according to claim 9, 10 or 11, further comprising a wire-crosslinking device for crosslinking the wire produced.

13. The order-receiving production system of a wire according to claim 12, wherein the wire-crosslinking device comprises:

an enclosed box including a pair of wire-guiding parts through which the wire passes;

an irradiation unit for irradiating an electron beam onto the wires which pass through the interior of the box; and

a pair of rollers arranged having a distance therebetween disposed rotatably in the box,

wherein the wire is guided into the box through one wire-guiding part, in the box the wire comes in contact with an outer circumferential surface of one roller located near to the one wire-guiding part and comes in contact with an outer circumferential surface of an opposite roller, and the wire again comes in contact with an outer circumferential surface of the one roller, thereby the wire is tied up to the pair of the rollers with the wire's sleeves tucked up and the wire is guided out from the box through an opposite wire-guiding part, and

the irradiation unit irradiates an electron beam onto the wires situated at the center between the pair of the rollers.

14. An order-receiving production system of a wiring harness comprising:

a wire-producing department for producing a wire;

a wiring harness-assembling department for assembling a wiring harness by using the wire produced by the wire-producing department;

a production control department for controlling the wire-producing department and the wiring harness-assembling department, and receiving an order of the wiring harness;

a first producing department for producing a pellet;  
a second producing department for producing a core wire; and  
a third producing department for producing an additive,

wherein the production control department: computes a first ordered quantity data indicating an amount of the pellet of synthetic resin for constituting a coating of the wire corresponding to the amount of the received order forwarded from an order-placing department and forwards the first ordered quantity data to the first producing department; computes a second ordered quantity data indicating an amount of the core wire corresponding to the amount of the received order forwarded from the order-placing department and forwards the second ordered quantity data to the second producing department; and computes a third ordered quantity data indicating an amount of the additive to be added to the synthetic resin corresponding to the amount of the received order forwarded from the order-placing department and forwards the third ordered quantity data to the third producing department,

the first, second and third producing departments produce the pellet, core wire and additive to the amount corresponding to the first, second and third ordered quantity data, respectively, and send the produced pellet, core wire and additive, respectively, to the wire-producing department, and

the wire-producing department extrudes a mixture of the pellets sent from the first producing department and the additive sent from the third producing department onto the circumference of the core wire sent from the second producing department while simultaneously mixing the pellets and the additive so that the core wire is coated with the mixture, thereby

producing the wire having a necessary length, and sends the wire produced to the wiring harness-assembling department, and

the wiring harness-assembling department attaches a desired component to the wire produced by the wire-producing department, thereby assembling a wiring harness.

15. The order-receiving production system of a wiring harness according to claim 14, wherein an outer surface of the wire produced is monochromatic.

16. The order-receiving production system of a wiring harness according to claim 15, wherein at least one of the wire-producing department and the wiring harness-assembling department comprises a coloring device for coloring the outer surface of the wire produced with a desired color.

17. The order-receiving production system of a wiring harness according to claim 14, 15 or 16, wherein at least one of the wire-producing department and the wiring harness-assembling department comprises a wire-crosslinking device for crosslinking the wire produced.

18. The order-receiving production system of a wiring harness according to claim 17, wherein the wire-crosslinking device comprises:

an enclosed box including a pair of wire-guiding parts through which the wire passes;

an irradiation unit for irradiating an electron beam onto the wires which pass through the interior of the box; and

a pair of rollers arranged having a distance therebetween disposed rotatably in the box,

wherein the wire is guided into the box through one wire-guiding part, in

the box the wire comes in contact with an outer circumferential surface of one roller located near to the one wire-guiding part and comes in contact with an outer circumferential surface of an opposite roller, and the wire again comes in contact with an outer circumferential surface of the one roller, thereby the wire is tied up to the pair of the rollers with the wire's sleeves tucked up and the wire is guided out from the box through an opposite wire-guiding part, and

the irradiation unit irradiates an electron beam onto the wires situated at the center between the pair of the rollers.

19. A wire-crosslinking device comprising:

an enclosed box including a pair of wire-guiding parts through which the wire passes;

an irradiation unit for irradiating an electron beam onto the wires which pass through the interior of the box; and

a pair of rollers arranged having a distance therebetween disposed rotatably in the box,

wherein the wire is guided into the box through one wire-guiding part, in the box the wire comes in contact with an outer circumferential surface of one roller located near to the one wire-guiding part and comes in contact with an outer circumferential surface of an opposite roller, and the wire again comes in contact with an outer circumferential surface of the one roller, thereby the wire is tied up to the pair of the rollers with the wire's sleeves tucked up and the wire is guided out from the box through an opposite wire-guiding part, and

the irradiation unit irradiates an electron beam onto the wires situated at the center between the pair of the rollers.